Section II

Developing Projects For Intervention

Chapter 3: Theoretical Bases For Demonstration Projects

Introduction

The demonstration projects represent a new stage in the Master's Project. During the audit we had collected data on the University's energy and waste streams. Now we would be actively intervening within different University departments to implement strategies to target those streams. To facilitate our work with these different departments, we relied upon several theoretical paradigms: action research, community participation, and behavior change. These theories and their relevance to our projects are discussed in this chapter.

Action research represents a dynamic approach to social planning and change. Practitioners of action research do not impose a fully formed action plan upon a community, but develop it within that community through a repeated process of action, evaluation, and refinement.

Our demonstration projects were located in the Business School, Department of Occupational Safety and Environmental Health (OSEH), and the Chemistry Department. Consequently, we were "outsiders" in the communities which would be affected by our projects. It was therefore essential to involve community members in the planning process, to ensure that their needs were adequately addressed and their expertise utilized. To elicit this involvement we drew from principles of community participation.

Both action research and community participation theories helped us to develop our projects and to establish a cooperative partnership with the communities involved. However, by April we had reached the stage for implementing our demonstration projects. In both the Business School and Chemistry Department, our projects would necessitate altering people's

existing behavior patterns; the projects' success therefore depends upon utilizing effective behavior change strategies. For this reason we have also included a discussion of behavior change techniques in the theory chapter.

Action Research

Action research provides a *methodology* for conducting research and is used most frequently in planning social interventions. In the United States, action research is associated with Kurt Lewin, who began publishing on this topic in the 1940s. Lewin (1946) described action research as proceeding "in a spiral of steps each of which is composed of a circle of planning, action, and fact-finding about the result of the action." (See Figure 1.) This ongoing process of setting goals, taking action, and stepping back to evaluate progress helps the practitioner to refine the research effort. Each step requires the researcher to clarify his or her goals and to adjust the strategies for achieving those goals. It calls for flexibility and emphasizes readjusting research in order to work toward continually more focused goals. Because action research is often between a researcher and the targeted community, it can be a means to include the community in the decision-making process. Indeed, "Lewin highly emphasized democratic decision making, a more equitable distribution of power, and the practical utilization of knowledge" (Wals and Stapp, 1989).

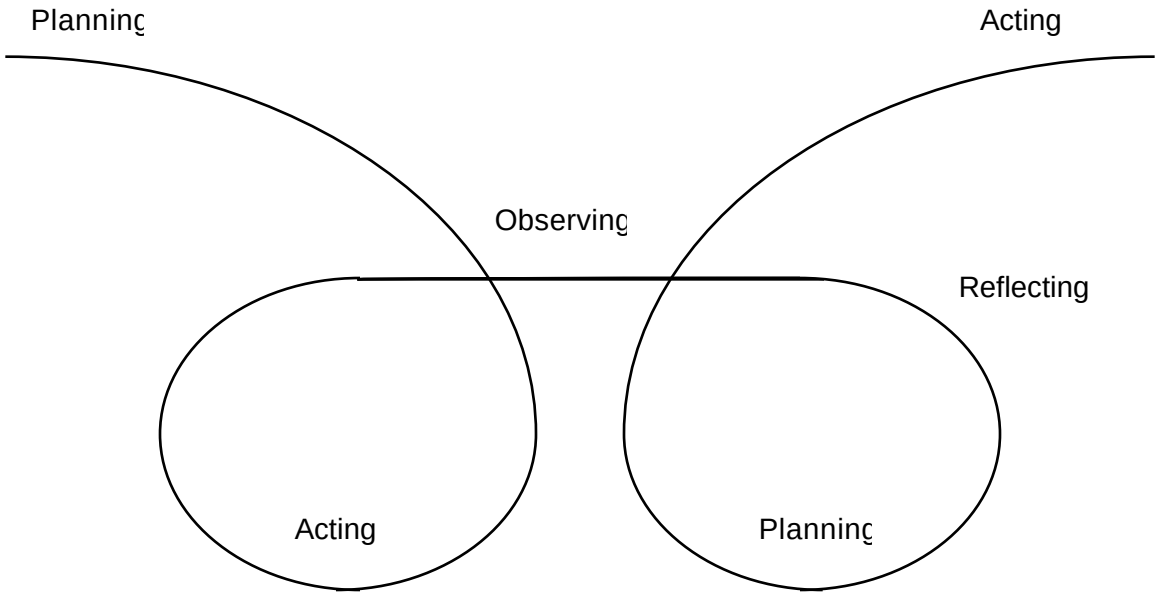

Figure 1

Action research can be viewed not only as a more democratic approach to planning, but also as a more practical one. By including community members in plan development, it allows them to understand the resultant project as the logical outcome of a long planning process rather than as a preconceived program imposed by outsiders. Furthermore, when a community has followed a project from its inception through various philosophical and physical transformations the final product is familiar to them. People who are involved in plan formation are thus more likely to feel competent to implement that plan (Kaplan and Kaplan, 1981).

Perry and Ortun Zuber-Skerritt (1992) summarize the main aspects of Altrichter's discussion of action research as: a group of people at work together, who are involved in the cycle of planning, acting, observing and reflecting on their work more deliberately and systematically than usual; and a public report of this experience (Altrichter, 1991, cited in Perry and Ortun Zuber-Skerritt, 1992). The evolution of the Business School and Chemical Tracking projects followed this spiral process of planning, acting, observing and reflecting and was enacted through meetings between the project groups and members of the targeted communities.

Wisner et al. (1991) emphasize the importance of effective communication in any action research that involves participation. They cite the jargon of different professional subgroups as a potential source of misunderstanding and an obstacle to project implementation. The Business School group, in particular, found it necessary to learn a new vocabulary in order to communicate effectively. For example, after the group had written a mission statement for the School, we worked with a member of that community to translate it into terms which would be acceptable and meaningful. Our group's long description of the greening mission became a systematic list of goals and strategies.

Community Participation

Numerous strategies exist for affecting community change. They range from mobilizing community members to take action, to involving them in the planning process, to developing community services (Checkoway, 1990). Typically, community participation is associated with work in low-income and other disadvantaged communities. However, the principles of involving the affected group in the planning and decision-making process of a project

are appropriate to any intervention. Such involvement better ensures that the group's needs will be met and that their expertise and resources will be utilized. In light of this, PolPrev relied upon community participation as one of its main tactics for implementing the demonstration projects.

Facilitating community participation from start to finish involves defining the community, eliciting participation, assessing the needs of the community, creating plans of action, reflecting on the experience, and creating new plans of action based on that reflection.

Furthermore, participation has been shown to increase the degree to which environmental changes meet participants' needs, values, and perceived control over their environment (Wandersman, 1979, Kaplan and Kaplan, 1981). Involving community members in the planning, implementation, and evaluation stages of a project often provides participants with a sense of ownership over the project, which in turn, can lead to a greater acceptance of the intervention within the community—especially if the participation stresses partnership (Arnstein, 1967; Brown, 1983a and 1983b).

If community participation is to occur, the community must have a certain level of competence—that is, feel that it is capable of tackling a task (Goeppinger and Baglioni, 1985). Iscoe (1974) noted:

> *the development of the competent community involves the provision and utilization of resources in a geographical and psychological community so that members of the community may make reasoned decisions about issues confronting them, leading to the most competent coping with these problems.*

Rappaport (1977) and Sarason (1972, 1974), among many others, have proposed similar definitions of the competent community. A common theme in these definitions is the notion that parts of the community develop congruent perceptions of one another through social interaction—in other words, people need to interact with one another to better appreciate the talents that each community member possesses. Congruent perceptions are necessary for the identification and resolution of community issues.

Eng (1988) has developed one model for community participation. In her article, *Extending the Unit of Practice from the Individual to the Community*, she maps out the following process for eliciting meaningful community participation. Defining the community comes first in order to diagnose the degree to which the community is capable of solving the situation at hand. It also helps to clarify the community's problem-solving and decision-making

structures. Initiating community action early in the intervention process by asking community members to join a core team helps the interveners in carrying out the assessment. Finally, defining the community gives the interveners a method for establishing rapport with influential people in the community and enables them to ask for their advice and assistance.

At this stage, a rudimentary needs assessment can also take place to study the problems identified by the community and to better determine members' present needs. Meetings, interviews, and surveys are among the more common needs assessment techniques, and were utilized by both the Business School and Chemical Tracking groups. Needs assessments can be a powerful tool for helping to bring a community together, and for developing support within the community for an intervention project.

The results of the assessment can then be used to plan action. As a part of this, it is helpful to form a core group of interveners and community members to determine the goals and objectives of an intervention. The goals and objectives should reflect the changes desired by the community.

The next step in the process is to select from the range of possible activities which could potentially achieve the goals and objectives. The sum of these activities represents the intervention which will address and resolve the problem identified earlier (Eng, 1988). Finally, evaluation of the intervention and the intervention process is critical to complete the experience: (1) Did we reach our goal? (2) What positive and negative effects are our interventions having?

The community participation model put forth by Marti-Costa and Serrano-Garcia (1987) is similar to Eng's. It includes four phases. The first of these phases includes familiarizing oneself with the community (e.g., seeking knowledge of its history and structure and the processes that would facilitate entry into it). Key persons in the community who are likely to support the intervention are also identified at this stage.

The second phase is characterized by the formation of a core group that ought to include both key community persons and interveners. This group directs and coordinates the needs assessment, and chooses the assessment techniques that will be most applicable to their particular situation.

In the third phase, the core group should publicize to the community the results of the needs assessment in order to let members know what needs

were identified. The final phase involves the formation of task groups to define long- and short-term goals and to develop further action plans.

For maximum effectiveness, group tasks should emphasize cohesiveness, not hierarchical splintering (Marti Costa and Serrano-Garcia, 1987). By doing so, the community will feel more involved and more empowered to implement change. As Robert H. Hayes (1985) said, "Do not develop plans and then seek capabilities; instead, build capabilities and then encourage the development of plans for exploiting them."

Behavior Change

Although we have not specifically utilized behavior-change techniques up to this point, they will be invaluable to the groups who will continue the projects we have begun. Therefore, what follows is a brief discussion of behavior change research, which provides a basis for understanding these future change agents.

The concept of conservation behavior refers to the wise use of our available resources. With the vast majority of American society being lured into the "consumption=happiness" lifestyle, the attempt to change people's behavior and to induce habits which support conservation can be a daunting prospect. However, researchers have studied the various techniques for behavior change and have identified those which work most effectively to induce change.

Cook and Berrenberg (1981) describe seven commonly used approaches to conservation behavior change:

- Using material incentives, such as cash rewards, and disincentives, such as fines.
- Evoking attitude-consistent behavior—"Am I doing what I believe to be right?"
- Facilitating implementation of conservation behavior (e.g., giving people the information they need to participate in recycling programs).
- Providing feedback on the effectiveness of conservation efforts.
- Communicating persuasively.
- Using social incentives (e.g., recognizing those in the community for environmentally sound behavior) and disincentives (e.g., calling

attention to those who are not engaged in environmentally sound behavior).

- Providing models of conservation behavior (e.g., endorsements from movie stars, the Dean, the President).

Studies have shown that these seven approaches are not all equally reliable and may not all be appropriate in a given situation. While the positive effect of information feedback on performance is well documented (Becker, 1978), the two most often-used behavior change techniques, the "economic" and "attitude-behavior" models, have been found unreliable (DeYoung, 1988). For instance, studies of efforts to apply the economic model to energy conservation policies have shown that people are slow to install cost saving devices in their homes. (It should be noted, however, that there is another possible explanation for this difficulty: a high initial capital cost to such projects, which could act as a disincentive). Such a contradiction of expectations demonstrates that human behavior is much more complex than the "rational actor" theory espouses (Yates and Aronson, 1983; Kaplan and Kaplan, 1981).

Other studies suggest that economic incentives may actually be counterproductive. Although people may adopt conservation behavior when a reward is offered, they come to associate environmentally positive behavior with this reward: once the reward is removed, they no longer practice the behavior. Even those individuals who had practiced recycling *before* economic incentives were offered, may come to associate this activity with a reward and will stop recycling once the reward is withdrawn (DeYoung, 1988). Thus, economic rewards are not durable.

The more effective behavior change strategies allow for the participant's involvement and cognitive engagement. When DeYoung investigated the attitudes of recyclers and non-recyclers, he found that one of the main differences between the two was not their attitude toward recycling but the amount of procedural knowledge they had of the activity (how to recycle cardboard, where to take it, on which days). This suggests that providing information may be an important strategy for encouraging conservation behavior, and that attitude change should not be the only focus of efforts. If conservation programs are to be effective, people need accurate information about how to carry

out conservation activities—exactly how does one recycle, for example—and not just familiarity with recycling in general (De Young, 1986).

Other studies have shown that different psychological and positional factors interact to determine an individual's actions ("positional factors" being those factors which restrict or facilitate a person's action.) According to Costanzo, Archer, et al. (1986), the following conditions must be met if information is to be effective in prompting action: "the information must be perceived, the individual must favorably evaluate the information, the information must be understood and remembered." Further, they found that the most compelling information is vivid and concrete, comes in the form of a personal story (as from an acquaintance), it comes from a credible source, and it is relevant to the recipient.

Another common behavior change technique is the use of prompts, such as a sign proclaiming "Turn off the Lights" next to a light switch. According to Katzev and Johnson (1987), however, research has not shown prompts to be very effective as the sole behavior change strategy. Although they may have an immediate effect, they lose their impact rapidly and do not create durable or long-lasting behavior change. The authors suggest that prompts might be more effective if they are combined with other techniques. A water conservation study conducted by Aronson and O'Leary (1983) examined the rate of compliance when prompts and models were used. People taking a shower were asked to turn off the water while lathering their hair and body. The compliance rate was 19% when a prompt was used. However, that figure jumped to 49% when one person modeled the behavior, and two models increased compliance to 67%. Such social influence techniques appear to be most effective if they request incremental changes from people. This is a "foot-in-the-door" approach which allows people to adopt new habits gradually rather than asking them to commit to a major change.

De Young's 1986 study of recycling attitudes suggests that social disincentives may hold some potential for promoting conservation behavior. The study indicated that some people were recycling even though they did not have positive attitudes towards recycling. It is possible that these grudging recyclers were motivated by social pressures and did not want to be conspicuous as the only ones on the block who were not recycling.

A promising approach to conservation behavior which has yet to receive much attention is the use of intrinsic motivation. "Intrinsic motivation"

refers to an open system of behavior, with emergent or intrinsic rather than promised or extrinsic goals. Such motivation comes from within a person, such as the belief that an action should be performed because it is the *right* thing to do, rather than because of social rewards or punishments. DeYoung (1988), drawing upon his research on intrinsic motivation, postulates that much of human behavior can be explained "in terms of goals and rewards that arise out of participation in an ongoing activity" (p. 282). Because intrinsic motivation is not dependent upon outside agents, it may be a reliable technique for fostering long-term, sustained conservation behavior.

Documenting an Action Research Project

The action research section in this chapter describes the dynamic approach of planning, acting and refining which we used to develop our projects. To best reflect this approach, we have documented our projects in a chronology form which allows us to present the evolution of the project and to highlight major decision points and periods of transition.

The chronologies serve an additional purpose. When we undertook our Project, our intention was to present our demonstration projects as guides and learning tools for others undertaking similar projects. We believe that others can best learn from our experiences if we present them in the form of case studies. Research has found stories can provide a form of vicarious experience. These new experiences are effective teaching tools and means of making people feel competent to act in situations similar to those presented in the stories (Bardwell, 1991; Freeman and Levstik, 1988; Monroe and Kaplan, 1988). We hope that the stories will provide a map for others wanting to travel a similar route, including those places to seek out and those places to avoid.

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